Montana Department of
ENVIRONMENTAL QUALITY
WATER PROTECTION BUREAU

Agency Use
Permit No.: MTG010272
Date Rec'd
Rec'd By

FORM
NMP

Nutrient Management Plan

READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For Filling Out Form NMP," found at the back of the Form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your Form 2B. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. For additional help in filling out this form please read the attached instructions. The 2008 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp

Section A - NMP Status *(Check one):*

☒ New — No prior NMP submitted for this site.

☐ Modification — Change or update to existing NMP.

Permit Number: MT _____ (Specify the permit number that was previously assigned to your facility.)

Section B - Facility or Site Information:

Site Name Fairhaven Colony

Site Location 124 fairhaven Rd

Nearest City or Town Ulm County Cascade

RECEIVED
MAR 29 2012
DEQ/WPB
PERMITTING & COMPLIANCE DIV.

Section C - Applicant (Owner/Operator) Information:

Owner or Operator Name Will Waldner

Mailing Address P.O. Box 29

City, State, and Zip Code Ulm MT 59485

Phone Number 406-866-3350

COPY

3/30/12

Section D - NMP Minimum Elements:

1. Livestock Statistics

Animal Type and number of animals	*# of Days on Site (per year)*	*Annual Manure Production (tons, cu. yds. or gal)*
1. Milk cows (Dairy) 180	Jan - Dec	1906.000 gallons
2. Dry cows 50	Jan - Dec	
3. Heifers 80	Jan - Dec	450 ton
4. Calves 120	Jan - Dec	
5. Sows Gestating 350	Jan - Dec	1724 000 liquid
6. Feeders 1350	Jan - Dec	
7. Weaned pigs 2890	Jan - Dec	159 ton dry
8. Hens layer 7400	Jan - Dec	64,000

Method used for estimating annual manure production:

NRCS MMP calculations

2. Manure Handling

Describe manure handling at the facility:

The manure is separated at the dairy and hog facilities with a fan separater. The liquid is pumped to holding lined lagoon, from there it is incorparated into the fields. The solids go to on-site stacking pad. Then spread with manure spreader.

Frequency of Manure Removal from confinement areas:

Daily

Is this manure temporarily stored in any location other than the confinement area? ☒ Yes ☐ No

If so then how and where? yes there are storage pits adjacent to the confinement area.

Is manure stored on impervious surface? ☒ Yes ☐ No

If yes, describe type and characteristics of this surface:

It is all on concrete

Section D - NMP Minimum Elements:

1. Livestock Statistics

Animal Type and number of animals	# of Days on Site (per year)	Annual Manure Production (tons, cu. yds.or gal)
1. Broilers 1000	Jan Early - Aug Early	50 yds.
2. Pullets 3700	Jan Early Aug Early	7540 gal
3.		
4.		
5.		
6.		
7.		
8.		

Method used for estimating annual manure production:

2. Manure Handling

Describe manure handling at the facility:

Frequency of Manure Removal from confinement areas:

Is this manure temporarily stored in any location other than the confinement area? ☐ Yes ☐ No

If so then how and where?

Is manure stored on impervious surface? ☐ Yes ☐ No

If yes, describe type and characteristics of this surface:

3. Waste Control Structures

Waste Control Structure (name/type)	Length (ft)	Width (ft)	Depth (ft)	Volume (cubic ft or gallons)
1. Lagoon			15	7.000.000
2. Dairy underfloor liquid	20	20	12	32.912
3. Corral open feedlot stack				2000 tons
4. Pullets underfloor pit	12	12	8	7540 gal
5. Swine underfloor liquid pit	20	20	12	32912 gal
6. Hens	20	20	8	64000 gal
7. Swine dry manure pad	40	26½	10	159 tons
8. Dairy dry manure pack	100	56	8	1008 tons
9.				
10.				
11.				
12.				

4. Disposal of Dead Animals

Describe how dead animals are disposed of at this facility:

The dead animals are composted in the solid manure The location of the stacking pad which is used as the composting facility is the Northeast corner of dairy milking barn GPS pt. 47° 24' 2099"N 111° 37' 48. 449 "W Legal description T19NR1E Sec 17 Eco Drum is on site to be used when temperature allows.

5. Clean Water Diversion Practices

Describe how clean water is diverted from production area:

Clean water is diverted away from animal lots with slopes roofs, waterways and gutters onto vegetated buffers.

6. Prohibiting Animals and Wastes from Contact with State Waters

Describe how animals and wastes are prohibited from direct contact with state waters:

Livestock are confined within pens(fences), barns ¼ mile from State waters animal waste is on concrete stacking pads concrete pits and lined lagoons. Diversions direct dirty water to evaporated ponds. When spreading animal wastes 100ft set backs are used

7. Chemicals and Contaminants

Describe how chemicals and other contaminants are handled on-site:

Containers are triple rinsed and recycled through approved facilities Rinse liquid is used on cropland. And the containers are Recycled to approved facilities. The chemical is stored in a building on concrete floor with walls around it

8. Best Management Practice (BMPS)

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's **production area**. Indicate the location of these measures. Include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces, and waterways above an open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area; decreasing open lot surface area; repairing or adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.

Clean water is ~~de~~diverted away from animal lots with sloped roofs, waterways and gutters onto vegatation buffers. Waterway north of dairy barn to vegatation buffer

Waste waters are contained or diverted to planned evaporation pond by terraces, berms. See NRCS design to be approved by DEQ.

The plate cooler used to cool the milk in the dairy barn is recycled and then used for flushing the barn manure to holding pit.

cribe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's **land application area**. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites; never spray irrigating wastes onto frozen ground; consulting with the Department prior to applying any liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.

Plant sampling/tissue analysis	(yes)/no	Rotational grazing	(yes)/no
Conservation or reduced tillage	(yes)/no	Manure injection or incorporation	(yes)/no
Terraces or other water control structures	yes/(no)	Contour plantings	(yes)/no
Riparian buffers or vegetative filter strips	yes/(no)	Winter "scavenger" or cover crops	yes/(no)

Other examples _____

9. Implementation, Operation, Maintenance and Record Keeping – Guidance

The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part II of the permit.

Has a guidance document been developed for the facility? (Yes) No

Certify the document addresses the following requirements:

Implementation of the NMP:	(Yes)	No
Facility operation and maintenance:	(Yes)	No
Record keeping and reporting:	(Yes)	No
Sample collection and analysis:	(Yes)	No
Manure transfer:	(Yes)	No

Provide name, date and location of most recent documentation:

Fairhaven Colony Sep 14, 2011 Clm MT 59485
124 Fairhaven Rd

If your answer to any of the above question is no, provide explanation

Section E – Land Application

Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?

No If no, then provide an explanation of how animal waste at this site are managed.

(Yes) If yes, then the information requested in Section E must be provided.

Photos and/or Maps

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"x17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The location of any down-gradient surface waters
- The location of any down-gradient open tile line intake structures
- The location of any down-gradient sinkholes
- The location of any down-gradient agricultural well heads
- The location of all conduits to surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field.
- The soil type(s) present and their locations within the individual land application field(s)
- The location of buffers and setbacks around state surface waters, well heads, etc.

Land Application Equipment Calibration

Describe the type of equipment used to land apply wastes and the calibrating procedures:

Liquid applicton: Acre meter and Gal/min are in the tractor
Dry manure: Load weight: Speed spreading width, distance

Manure Sampling and Analysis Procedures

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining application rates for manure, litter, and process wastewater.

Manure Sample collection will occur according to the following method:

The recommended method(s) found in Section 5 of Department Circular DEQ 9

Other (describe) _____

Soil Sampling and Analysis Procedures

A representative soil sample from the top 6 inch layer of soil in each field will be analyzed for phosphorus content at least once every five years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater.

Soil sample collection will occur according to the following method:

The recommended method(s) found in Section 5 of Department Circular DEQ 9

Other (describe) _____

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

Crops and Manure

Field Name and spreadable acres for each (for fields with identical crops and soils type):

Swatho and Mud field 438 acres

Crop 1 (year 1 or ?) plant species	Spring & Winter Wheat
Irrigated (Y/N)	no
Yield Goal (ton/ac or bushel/ac)	60
N Content of soil as nitrate (lbs/acre or ppm)	6.8 ppm
P Content of soil as P_2O_5 (lbs/acre or ppm)	16 ppm
Time of Year When Application will Occur (month)	August
Application frequency (per year by month)	per year
Form of manure (liquid/solid)	liquid
Method of Application	incorporate
Is manure incorporated or broadcast?	incorporated
Frequency of Application (yearly, biannual, etc.?)	biannual
Crop 2	
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P_2O_5 (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

Land Application Data-Narrative approach

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

Crops and Manure

Field Name and spreadable acres for each (for fields with identical crops and soils type):

Bachelor 130 acres Barley

Crop 1 (year 1 or ?) plant species	Barley
Irrigated (Y/N)	no
Yield Goal (ton/ac or bushel/ac)	50 bu
N Content of soil as nitrate (lbs/acre or ppm)	4.6 ppm
P Content of soil as P_2O_5 (lbs/acre or ppm)	16 ppm
Time of Year When Application will Occur (month)	October
Application frequency (per year by month)	Per year
Form of manure (liquid/solid)	solid
Method of Application	spreading
Is manure incorporated or broadcast?	broadcast
Frequency of Application (yearly, biannual, etc.?)	biannual
Crop 2	
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P_2O_5 (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

Phosphorus Risk Assessment

The permittee shall assess the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using either Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

Method Used

Indicate which method will be used to determine phosphorus application:

Method A – Representative Soil Sample
Method B – Phosphorus Index

Method A – Representative Soil Sample

a) Obtain one or more representative soil sample(s) from the field.
b) Have the sample analyzed for Phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm).
c) Using the results of the Olsen P test, determine the application basis according to the Table below

Soil Test	
Olsen P Soil Test Result (ppm)	*Application Basis*
<25.0	Nitrogen Needs Of Crop
25.1 - 100.0	Phosphorus Needs Of Crop
100.0 - 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application

Method B – Phosphorus Index

a) Complete a Phosphorus Index according to for each crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections Appendix A, please refer to Attachment 2 of Department Circular DEQ 9.
b) Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus	
Total Phosphorus Index Value	*Site Vulnerability to Phosphorus Loss*
<11	Low
11-21	Medium
22-43	High
>43	Very High

c) Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	
Site Vulnerability to Phosphorus Loss	*Application Basis*
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient Budget Worksheet

Site/Field: Bachelor

	Nutrient Budget	*Nitrogen-based Application*	*Phosphorus-based Application*
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9	82	10
(-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable		
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)		
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	0	0
(-)	Nutrients supplied in irrigation water, lbs/acre	0	0
	= Additional Nutrients Needed, lbs/acre	82	10
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)	9 lbs/ton	3.30 lbs/ton
(x)	Nutrient Avalability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)	0.5	1.0
	= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal	4.50	3.30
	Additional Nutrients needed, lbs/acre (calculated above)	82	10
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)	4.50	3.30
	= Manure Application Rate, tons/acre or 1,000 gal/acre		3.03 tons/acre

Comments:

d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient Budget Worksheet

Site/Field: Swath o 202 acres and Mud field 236 acres Chem fallow

	Nutrient Budget	*Nitrogen-based Application*	*Phosphorus-based Application*
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9	130	31
(-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable		
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)		
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	0	0
(-)	Nutrients supplied in irrigation water, lbs/acre	0	0
	= Additional Nutrients Needed, lbs/acre	130	31
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)	13.8	3.04
(x)	Nutrient Avalability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)	.40	0.1
	= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal	5.31	3.04
	Additional Nutrients needed, lbs/acre (calculated above)	130	31
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)	5.31	3.04
	= Manure Application Rate, tons/acre or 1,000 gal/acre	10,000 gal	10,000 gal

Comments:

We meet the phosphorus needs by applying 10,000 gal/acre. We will not apply manure to chem-fallow acres in further application.

Section F - CERTIFICATION

Permittee Information:

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)

William J Waldner

B. Title (Type or Print)

Member

C. Phone No.

406-866-3350 or 52

D. Signature

Will Waldner

E. Date Signed

Sep 14, 2011

Return the Form NMP, Nutrient Management Plan to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

AgSource Laboratories
A Subsidiary of Cooperative Resources International
300 Speedway Circle, Suite 2
Lincoln, NE 68502
Tel: 402-476-0300
Fax: 402-476-0302

TRIPLE OPTION SOIL ANALYSIS

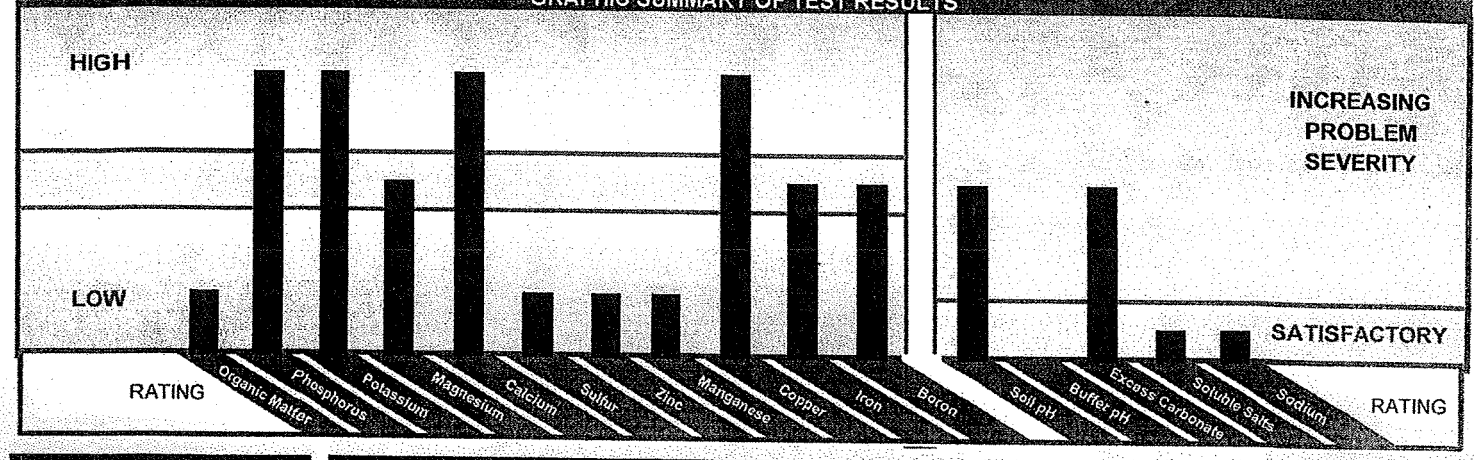
111795

Submitted By: 5943310
Greyn Fertilizer Supply Inc
51 E Frontage Rd.
Dutton, MT 59433

Submitted For:
FAIRHAVEN COL
ULM, MT

Date Reported	Laboratory Turnaround	Samples Will Be Stored Until	Laboratory Sample #	Field Identification
25-Aug-2011	1 Day	08-Sep-2011	AE65337	

GRAPHIC SUMMARY OF TEST RESULTS



REPORT OF ANALYSIS

YOUR SAMPLE NUMBER	SWATHO
Soil pH	7.7
Buffer Index	--
Excess Carbonate	L
Soluble Salts mmhos/cm	0.5
Sodium ppm	40.0
% Organic Matter	2.1
ANALYSIS OF NUTRIENT ELEMENTS IS IN PARTS PER MILLION (ppm)	
Nitrate N	14.6
Phosphorus Bray 1 Olsen	29
Potassium	451
Magnesium	725
Calcium	4706
Sulfate Sulfur	7
Zinc	1.1
Manganese	1.0
Copper	1.6
Iron	16.7
Boron	1.0
Bulk Density	1.3

FERTILIZER GUIDLINES IN: Lbs/Acre

1st Option Intended Crop			2nd Option Intended Crop			3rd Option Intended Crop		
Winter_Wheat			Winter_Wheat			Winter_Wheat		
Yield Goal			Yield Goal			Yield Goal		
45 BU			55 BU			65 BU		
Preceding Crop			Preceding Crop			Preceding Crop		
	PLANT FOOD GUIDELINE RANGES	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES	CROP REMOVAL RATES
N	65.0	115	N	95.0	145	N	120.0	170
P_2O_5	0.0	23	P_2O_5	0.0	28	P_2O_5	0.0	33
K_2O	0.0	44	K_2O	0.0	54	K_2O	0.0	64
MgO	0.0		MgO	0.0		MgO	0.0	
S	4.0		S	4.3		S	4.8	
Zn	0.0		Zn	0.0		Zn	0.0	
Mn	6.5		Mn	7.8		Mn	9.0	
Cu	0.0		Cu	0.0		Cu	0.0	
Fe	0.0		Fe	0.0		Fe	0.0	
B	0.0		B	0.0		B	0.0	

Lime Guidelines are for 100% Effective Calcium Carbonate (ECC) with a 6" Incorporation Depth.

ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION)

Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	ESTIMATED Actual % Sodium	ESTIMATED Suggested Sodium	ESTIMATED CEC for Your Soil
0.0	0 - 5	3.7	4.1 - 7	19.6	15 - 20	76.1	65 - 75	0.6	0 - 5	30.9

after manure

AgSource Laboratories
A Subsidiary of Cooperative Resources International
300 Speedway Circle, Suite 2
Lincoln, NE 68502
Tel: 402-476-0300
Fax: 402-476-0302

TRIPLE OPTION SOIL ANALYSIS

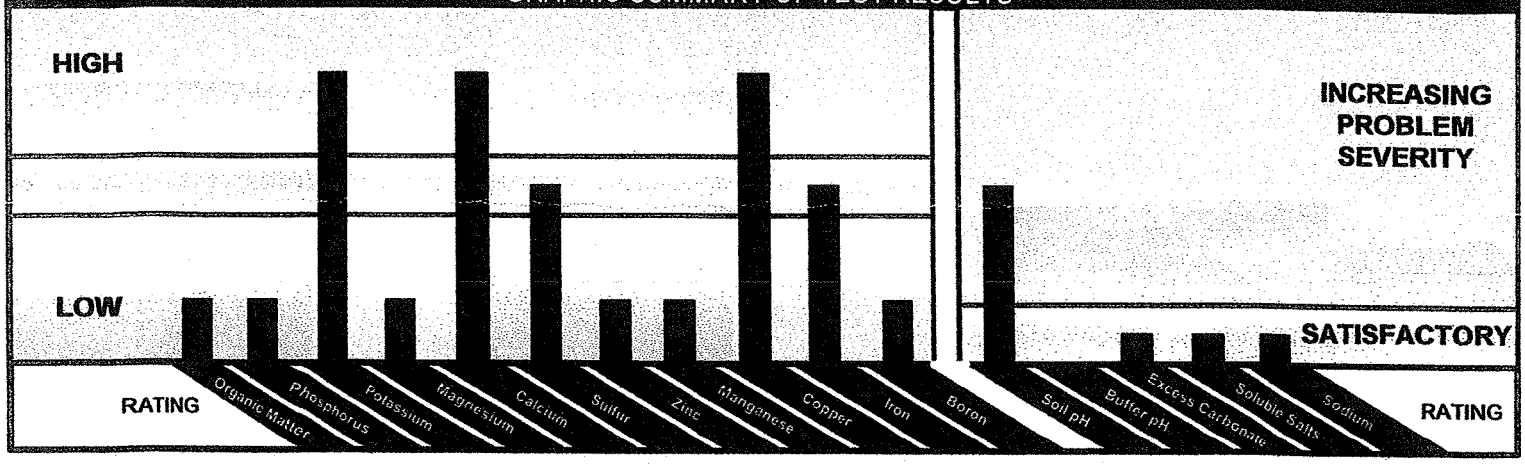
43647

Submitted By: 5942211
Greyn Fertilizer Supply Inc
154 US Hwy 221
Choteau, MT 594221020

Submitted For:
FAIRHAVEN COL
ULM, MT

Date Reported	Laboratory Turnaround	Samples Will Be Stored Until	Laboratory Sample #	Field Identification
07-Apr-2011	1 Day	21-Apr-2011	AD87308	

GRAPHIC SUMMARY OF TEST RESULTS



REPORT OF ANALYSIS

YOUR SAMPLE NUMBER: SWATHO	
Soil pH	7.4
Buffer Index	--
Excess Carbonate	L
Soluble Salts mmhos/cm	0.4
Sodium ppm	20.0
% Organic Matter	2.1
ANALYSIS OF NUTRIENT ELEMENTS IS IN PARTS PER MILLION (ppm)	
Nitrate N	6.8
Phosphorus Bray 1 Olsen	16
Potassium	337
Magnesium	500
Calcium	4361
Sulfate Sulfur	12
Zinc	0.6
Manganese	1.0
Copper	1.5
Iron	22.3
Boron	0.8
Bulk Density	1.2

FERTILIZER GUIDLINES IN: Lbs/Acre

1st Option Intended Crop		
Spring_Wheat		
Yield Goal		
40 BU		
Preceding Crop		
PLANT FOOD GUIDELINE RANGES		CROP REMOVAL RATES
N	95.0	130
P_2O_5	25.0	20
K_2O	0.0	39
MgO	0.0	
S	0.0	
Zn	2.5	
Mn	5.8	
Cu	0.0	
Fe	0.0	
B	0.0	

2nd Option Intended Crop		
Spring_Wheat		
Yield Goal		
50 BU		
Preceding Crop		
PLANT FOOD GUIDELINE RANGES		CROP REMOVAL RATES
N	130.0	165
P_2O_5	30.0	26
K_2O	0.0	49
MgO	0.0	
S	0.0	
Zn	3.0	
Mn	7.0	
Cu	0.0	
Fe	0.0	
B	0.0	

3rd Option Intended Crop		
Spring_Wheat		
Yield Goal		
60 BU		
Preceding Crop		
PLANT FOOD GUIDELINE RANGES		CROP REMOVAL RATES
N	165.0	200
P_2O_5	35.0	31
K_2O	0.0	59
MgO	0.0	
S	0.0	
Zn	3.3	
Mn	8.3	
Cu	0.0	
Fe	0.0	
B	0.0	

Lime Guidelines are for 100% Effective Calcium Carbonate (ECC) with a 6" Incorporation Depth.

ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION)

Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	ESTIMA CEC for Your Soil
0.0	0 - 5	3.2	4.1 - 7	15.5	15 - 20	81.0	65 - 75	0.3	0 - 5	26.9

Before Manure

AgSource Laboratories
300 Speedway Circle, Suite 2
Lincoln, NE 68502
Tel: 402-476-0300
Fax: 402-476-0302

TRIPLE OPTION SOIL ANALYSIS

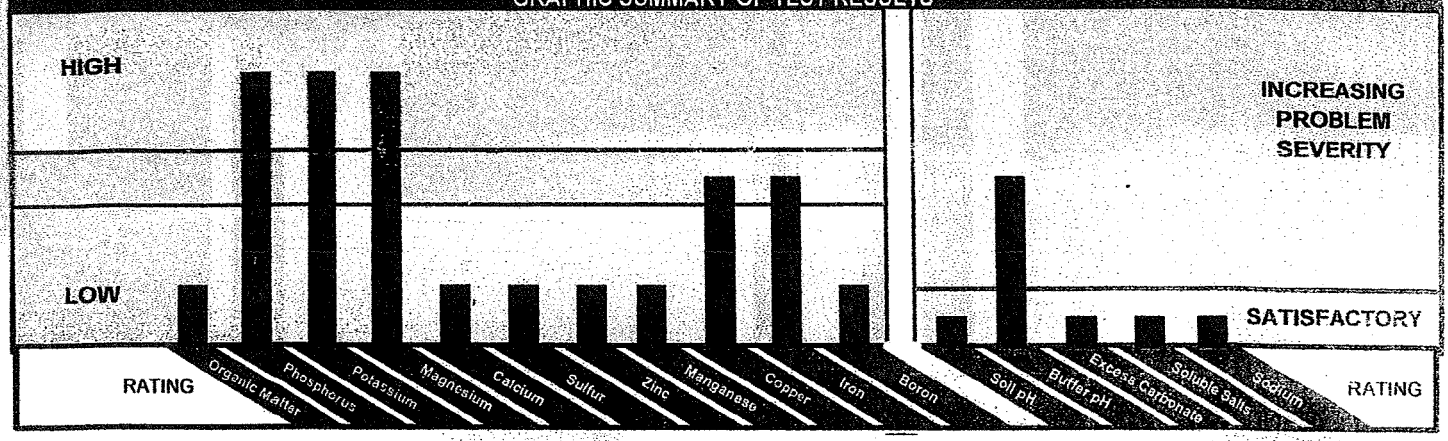
159722

Submitted By: 5943310
Geyer Fertilizer Supply Inc
51 E Frontage Rd.
Dutton, MT 59433

Submitted For:
FAIRHAVEN COL
ULM, MT

Date Reported	Laboratory Turnaround	Samples Will Be Stored Until	Laboratory Sample #	Field Identification
22-Mar-2012	1 Day	16-Mar-2012	AG31174	

GRAPHIC SUMMARY OF TEST RESULTS



REPORT OF ANALYSIS

YOUR SAMPLE NUMBER	BECHELOR
Soil pH	6.5
Buffer Index	7.1
Excess Carbonate	VL
Soluble Salts mmhos/cm	0.3
Sodium ppm	29.0
% Organic Matter	1.7
ANALYSIS OF NUTRIENT ELEMENTS IS IN PARTS PER MILLION (ppm)	
Nitrate N	12.7
Phosphorus Bray 1 Olsen	44 —
Potassium	517
Magnesium	408
Calcium	1846
Sulfate Sulfur	5
Zinc	0.9
Manganese	3.8
Copper	0.6
Iron	27.0
Boron	0.2
Bulk Density	1.4

FERTILIZER GUIDLINES IN: Lbs/Acre

1st Option Intended Crop			2nd Option Intended Crop			3rd Option Intended Crop		
Malt_Barley			Malt_Barley			Malt_Barley		
Yield Goal			Yield Goal			Yield Goal		
50 BU			60 BU			70 BU		
Preceding Crop			Preceding Crop			Preceding Crop		
Malt_Barley			Malt_Barley			Malt_Barley		
PLANT FOOD GUIDELINE RANGES		CROP REMOVAL RATES	PLANT FOOD GUIDELINE RANGES		CROP REMOVAL RATES	PLANT FOOD GUIDELINE RANGES		CROP REMOVAL RATES
N	15.0	60	N	30.0	70	N	40.0	85
P_2O_5	0.0	26	P_2O_5	0.0	31	P_2O_5	0.0	36
K_2O	0.0	49	K_2O	0.0	59	K_2O	0.0	69
MgO	0.0		MgO	0.0		MgO	0.0	
S	7.8		S	8.5		S	9.3	
Zn	1.0		Zn	1.3		Zn	1.8	
Mn	1.5		Mn	2.8		Mn	4.0	
Cu	0.0		Cu	0.0		Cu	0.0	
Fe	0.0		Fe	0.0		Fe	0.0	
B	0.8		B	0.8		B	0.8	

Lime Guidelines are for 100% Effective Calcium Carbonate (ECC) with a 6" Incorporation Depth.

ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION)

Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	ESTIMATED Actual % Sodium	ESTIMATED Suggested Sodium	CEC for Your Soil
10.2	0 - 5	8.5	4.1 - 7	21.7	15 - 20	58.9	65 - 75	0.8	0 - 5	

after Manure

AgSource Laboratories
A Subsidiary of Cooperative Resource International

300 Speedway Circle, Suite 2
Lincoln, NE 68502

Tel: 402-476-0300
Fax: 402-476-0302

TRIPLE OPTION SOIL ANALYSIS

43647

Submitted By: 5942211
Greyn Fertilizer Supply Inc
154 US Hwy 221
Choteau, MT 594221020

Submitted For:
FAIRHAVEN COL
ULM, MT

Date Reported	Laboratory Turnaround	Samples Will Be Stored Until	Laboratory Sample #	Field Identification
07-Apr-2011	1 Day	21-Apr-2011	AD87305	

GRAPHIC SUMMARY OF TEST RESULTS

REPORT OF ANALYSIS

YOUR SAMPLE NUMBER	BECHELOR
Soil pH	7.1
Buffer Index	--
Excess Carbonate	VL
Soluble Salts mmhos/cm	5.3
Sodium ppm	54.0
% Organic Matter	2.1
ANALYSIS OF NUTRIENT ELEMENTS IS IN PARTS PER MILLION (ppm)	
Nitrate N	4.1
Phosphorus Bray 1 Olsen	16 --
Potassium	377
Magnesium	434
Calcium	7736
Sulfate Sulfur	1599
Zinc	0.7
Manganese	2.0
Copper	1.9
Iron	29.6
Boron	1.1
Bulk Density	1.3

FERTILIZER GUIDLINES IN: Lbs/Acre

1st Option Intended Crop			2nd Option Intended Crop			3rd Option Intended Crop		
Barley			Barley			Barley		
Yield Goal			Yield Goal			Yield Goal		
40 BU			50 BU			60 BU		
Preceding Crop			Preceding Crop			Preceding Crop		
	PLANT FOOD GUIDELINE RANGES	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES	CROP REMOVAL RATES
N	35.0	65	N	50.0	80	N	65.0	95
P_2O_5	25.0	20	P_2O_5	30.0	26	P_2O_5	35.0	31
K_2O	0.0	39	K_2O	0.0	49	K_2O	0.0	59
MgO	0.0		MgO	0.0		MgO	0.0	
S	0.0		S	0.0		S	0.0	
Zn	2.0		Zn	2.3		Zn	2.8	
Mn	4.5		Mn	5.8		Mn	7.0	
Cu	0.0		Cu	0.0		Cu	0.0	
Fe	0.0		Fe	0.0		Fe	0.0	
B	0.0		B	0.0		B	0.0	

Lime Guidelines are for 100% Effective Calcium Carbonate (ECC) with a 6" Incorporation Depth.

ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION)

Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	ESTIMATED Actual % Sodium	ESTIMATED Suggested Sodium	CEC for Your Soil
0.0	0 - 5	2.2	4.1 - 7	8.3	15 - 20	88.9	65 - 75	0.5	0 - 5	

Before Manure

MANURE NUTRIENT ANALYSIS REPORT Will Waldner

AgSource Soil & Forage Laboratory
A subsidiary of Cooperative Resources International

AGSOURCE SOIL & FORAGE LABORATORY
106 N. CECIL STREET
BONDUEL, WI 54107
PHONE (715)758-2178 FAX (715)758-2620

ANALYSIS FOR: WILL WALDNER -
DATE PROCESSED: 02/18/2011
DATE SAMPLED: / /
SAMPLE NUMBER: 15139
MATERIAL: Dairy / hog
SAMPLE TYPE: DAIRY
STORAGE SYSTEM: SOLID

ACCT: CEE

WILL WALDNER - FAIRHAVEN
BOX 29
ULM, MT 59485

DRY MATTER, % 26.70

MOISTURE, % 73.30

	Estimated Available Nutrient Credits			
	Total Nutrients lbs/ton	In 1st Year of Application lbs/ton	If Applied 2 Consecutive Yrs lbs/ton	If Applied 3 Consecutive Yrs lbs/ton
Nitrogen (Injected)	9.00	3.60	4.50	4.95
Nitrogen(Surface Applied)	9.00	2.70	3.60	4.05
Phosphorus as P_2O_5	3.30	1.98	2.31	2.48
Potassium as K_2O	4.10	3.28	3.69	3.90
Sulfur	1.23	0.74	0.86	0.92
Estimated Value of Available Nutrients		$3.93	$4.74	$5.14

MINOR ELEMENTS *3

Calcium:	N/R	Zinc:	N/R
Magnesium:	N/R	Manganese:	N/R
Copper:	N/R	Sodium:	N/R
Iron:	N/R		

COMMENTS

*1 Applications of manure on the same field for 2 consecutive years increases availability of N, P, K, and S by 10%, and for 3 or more consecutive years by 15%. Availability of N changes depending on application technique. Injection or incorporation within 3 days of application results in higher N availability.

*2 Value based on commercial fertilizer costs as of 03/05/2010. N (Urea) $0.46/lb, P2O5 (Triple Superphosphate) $0.54/lb, K2O (Potash) $0.39/lb, S (Elemental Sulfur) $0.46/lb.

*3 If minor elements are requsted, they are reported on a 'dry matter' basis. If ammonia, nitrate or pH are requested, they are reported on an 'as is' basis.

MANURE NUTRIENT ANALYSIS REPORT

AgSource Soil & Forage Laboratory
A subsidiary of Cooperative Resources International

AGSOURCE SOIL & FORAGE LABORATORY
106 N. CECIL STREET
BONDUEL, WI 54107
PHONE (715)758-2178 FAX (715)758-2620

ACCT: 997

AGSOURCE SOIL & FORAGE LAB
106 N. CECIL STREET P.O.
BONDUEL, WI 54107

ANALYSIS FOR: FAIRHAVEN COLONY
DATE PROCESSED: (8/03/2011)
DATE SAMPLED: / /
SAMPLE NUMBER:
MATERIAL: Dairy
SAMPLE TYPE:
STORAGE SYSTEM: LIQUID

DRY MATTER, % 1.20

MOISTURE, % 98.80

	Total Nutrients lbs/1000 gal	Estimated Available Nutrient Credits: In 1st Year of Application lbs/1000 gal	If Applied 2 Consecutive Yrs lbs/1000 gal	If Applied 3 Consecutive Yrs lbs/1000 gal
Nitrogen (Injected)	13.28	5.31	6.64	7.30
Nitrogen (Surface Applied)	13.28	3.98	5.31	5.98
Phosphorus as P_2O_5	2.58	1.55	1.80	1.93
Potassium as K_2O	15.41	12.32	13.87	14.64
Sulfur	0.80	0.48	0.56	0.60
Estimated Value of Available Nutrients		$9.44	$11.15	$12.00

MINOR ELEMENTS *3

Calcium:	N/R	Zinc:	N/R
Magnesium:	N/R	Manganese:	N/R
Copper:	N/R	Sodium:	N/R
Iron:	N/R		

COMMENTS

*1 Applications of manure on the same field for 2 consecutive years increases availability of N, P, K, and S by 10%, and for 3 or more consecutive years by 15%.
Availability of N changes depending on application technique.
Injection or incorporation within 3 days of application results in higher N availability.

*2 Value based on commercial fertilizer costs as of 08/11/2009.
N (Urea) $0.57/lb, P2O5 (Triple Superphosphate) $0.67/lb, K2O (Potash) $0.48/lb,
S (Elemental Sulfur) $0.46/lb.

*3 If minor elements are requsted, they are reported on a 'dry matter' basis.
If ammonia, nitrate or pH are requested, they are reported on an 'as is' basis.

United States Department of Agriculture

USDA

NRCS Natural Resources Conservation Service

12 3rd Street NW, Suite 300, Great Falls, MT 59404
Phone (406) 453-9641 Ext. 130

Date: March 20th, 2012

To: John McDunn, MT DEQ

Subject: Fairhaven Colony Variance Request

Fairhaven colony and the MT NRCS are requesting a variance from the criteria stated in the MT Circle 9 that a stormwater holding pond will have a depth to bedrock of no less than 10 ft. The current design allows for a depth of 7' to bedrock from the bottom of the pond. The bedrock is sandstone that isn't uniform across the area where the pond would lay. It holds water that acts like a shallow aquifer. Well logs onsite show that a larger water table has not raised higher than elevation 3428'. Proposed bottom of pond elevation is 3843.6'

This design is desired over other shallower designs because a deeper pond that can be more easily agitated and pumped out reduces the risk of damaging the sealed liner on the pond bottom. The performance of agitation equipment decreases as the agitation area goes up. If you can improve agitation performance by keep the pond area smaller it will need to be scrapped out less often. Scrapping the pond bottom increases the chance of puncturing the EPDM liner that holds all liquid from seeping.

The EPDM liner is preferred to a clay liner because the pond may be dry for much of the year. These dry periods could cause cracking in the clays that would damage its impermeable characteristic.

If you have any other questions regarding this design please contact me.

Daniel Ostrem
NRCS, Civil Engineer
406-727-7580 ext. 132
12 3rd Street NW suite #300
Great Falls, MT 59404
daniel.ostrem@mt.usda.gov

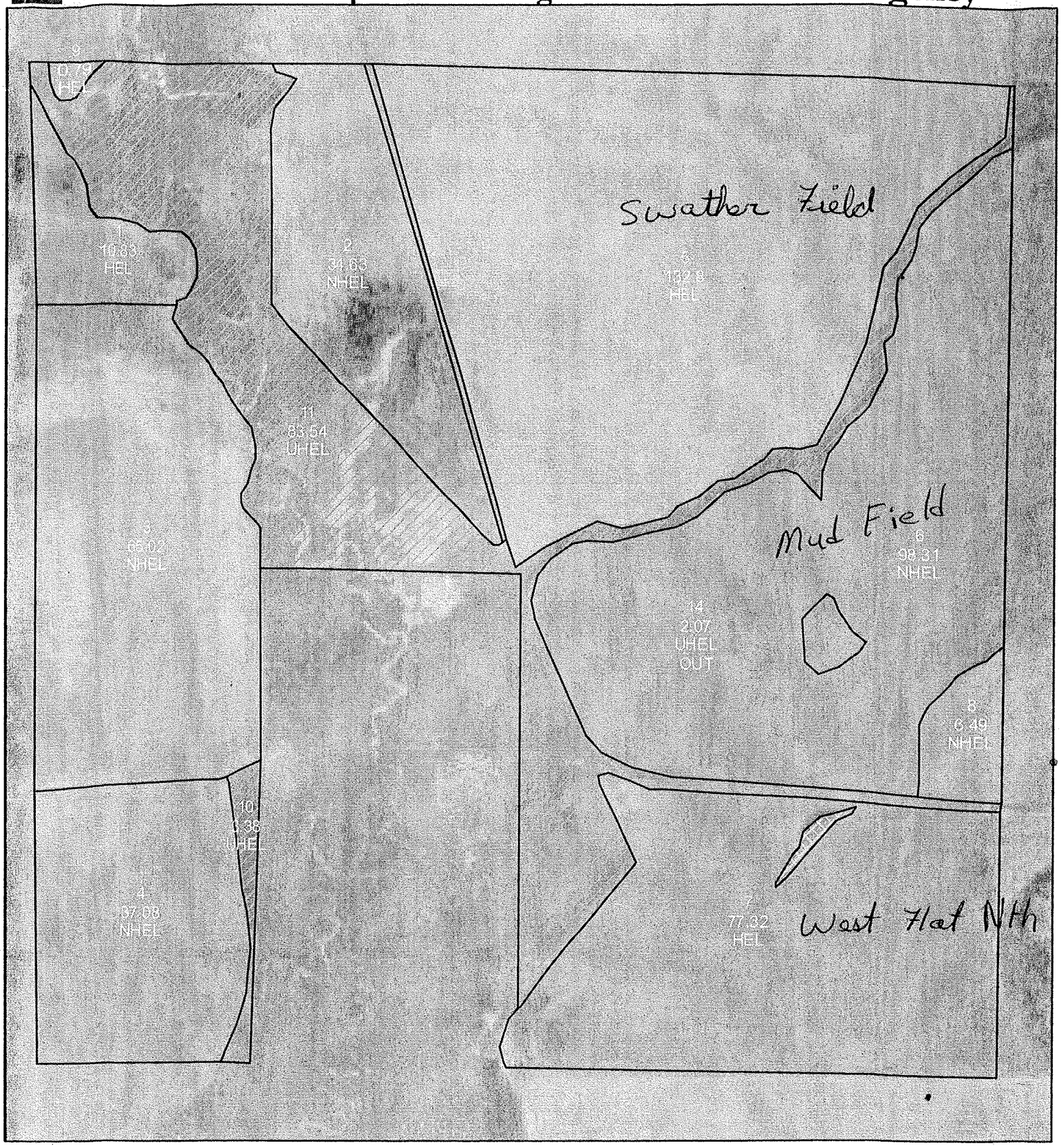
Fairhaven Colony agrees to the proposed variance and wishes to build the stormwater management system as the MT NRCS has designed.

Signature of Agreement for Fairhaven Colony

X: Joseph E Waldner Date: 3-20-12

Title: Sec. Treasurer

United States Department of Agriculture Farm Service Agency



FSA

Montana 2011

Cascade County

7-19N-1E

Farm: 7664

Tract: 8020

Legend

- Restricted Use
- Limited Restrictions
- Exempt from Conservation Compliance Provisions
- CLU Field Boundary
- Rangeland/Forest
- Non Ag Use

N W E S

1:8,500

USDA FSA maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or the 2009 ortho rectified imagery for Montana. The producer accepts the data 'as is' and assumes all risks associated with its use. The USDA Farm Service Agency assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside of FSA Programs. Wetland identifiers do not represent the size, shape or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact wetland boundaries and determinations, or contact NRCS.

Feb 04, 2011

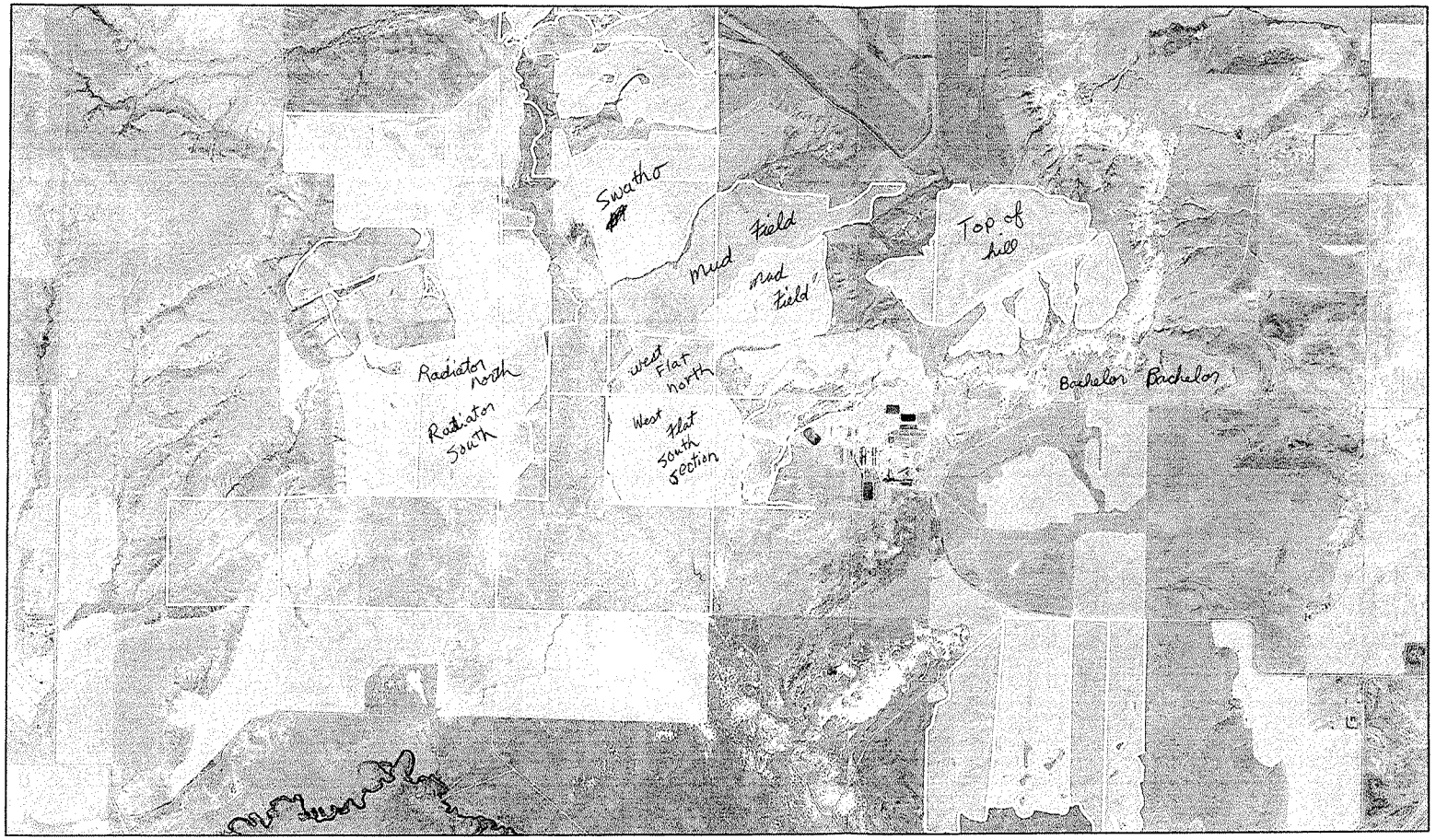
Location Map

Customer(s): FAIRHAVEN COLONY INC

Date: 7/18/2011

Field Office:

Assisted By: JOYCE TREVITHICK



Legend

Practices (polygons)

1,900 0 1,900 3,800 5,700 7,600

Feet

N

T19NR1ESB